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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/421,806	10/20/1999	MARCUS WAGNER	1434P/BC9990	4629

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EXAMINER

JUNTIMA, NITTAYA

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 12/19/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/421,806

Applicant(s)

WAGNER, MARCUS

Examiner

Nittaya Juntima

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 14, 15, 17-25, 32, 33 and 35-43 is/are rejected.
- 7) ☒ Claim(s) 8-13, 16, 26-31 and 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-43 are pending.

Drawings

2. The drawings are objected to because of the following:
 - the line 202 in Fig. 2B should be connected to the Central Site instead of the Server;
 - in Figs. 10, 12, and 15, the word "STAR" at the beginning of the flow chart should be changed to "START."

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because of the following:
 - at line 8, "provide fast" should be "provides fast" and at line 11, "transmission tasks" should be "transmission task."

Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities:
 - at line 8, page 1, "a number of receivers 110" should be "a number of receivers 112-116,"
 - at line 2, page 2, "receiver 112-116" should be "receivers 112-116;"

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- at line 14, page 6, "that are invoked by Uplink 214" should be "that is invoked by Uplink 214;" and

- at line 14, page 7, "life video streams (LVS)" should be "live video streams (LVS)."

Appropriate correction is required.

Claim Objections

4. The following claims are objected to because of the informalities:

- in claim 1, at line 5 of the claim, "one file transmissions task" should be "one file transmission task;"

- in claims 2 and 20, at line 7 of claim 2 and at line 8 of claim 20, "life-video stream (LVS)" should be "live-video stream (LVS);"

- in claim 8, at line 9 of the claim, an extra period following the word "task" should be deleted;

- in claims 15 and 33, at line 6 of claim 15 and at line 7 of claim 33, "(d3)" should be changed to "(c3)" and the word "GSF" should be spelled out as to avoid any possible confusions over its meaning;

- in claims 17 and 35, at line 1 of the claims, "tasks are" should be "task is" and at line 2 of the claims, "allocations are" should be "allocation is;"

- in claims 37 and 38, the words "GSF" and "LVS" should be spelled out as to avoid any possible confusions over their meanings.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, 4, 17-19, 22, and 35-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Natarajan (USPN 5,742,594).

Per **claims 1, 39, and 41**, Natarajan teaches a method for media delivery in a network, comprising the steps of:

- determining an available bandwidth for file transmission (non-real time service) for a time interval (time slot) (col. 3, lines 42-67 – col. 4, lines 28-34); and

- (claim 1 only) allocating at least a portion of the available bandwidth to at least one file transmission task, wherein each of the at least one file transmission task may be allocated a different amount of the available bandwidth (col. 4, lines 9-16);

- (claim 39 only) allocating at least a portion of the available bandwidth to at least one file transmission task, wherein each of the at least one file transmission task may be allocated a different amount of the available bandwidth (col. 4, lines 9-16), wherein the at least one file transmission task for each time interval is scheduled back-to-back (any remaining slots of the total slots requested by each user that were not processed in the preceding frame is scheduled for process in the following frame, col. 6, lines 11-19 and 31-42);

- (claim 41 only) allocating at least a portion of the available bandwidth to at least one file transmission task, wherein each of the at least one file transmission task may be allocated a

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different amount of the available bandwidth (col. 4, lines 9-16), wherein the allocated available bandwidth varies as a polynomial in time (the requested amount of bandwidth as a function of time is known throughout the time interval the request spans, col. 6, lines 11-19).

Per **claim 4**, Natarajan further teaches updating a total available bandwidth and checking for the available bandwidth for file transmission for the time interval (col. 4, lines 28-34).

Per **claim 17**, Natarajan teaches at least one file transmission task is scheduled back-to-back when duration of allocation is known when the allocation is made (col. 6, lines 11-19 and 31-42).

Per **claim 18**, Natarajan teaches the allocation of the available bandwidth to the at least one file transmission task is varied as a polynomial in time (col. 6, lines 11-19).

Per **claim 37**, Natarajan teaches a method for media delivery in a network, comprising the steps of:

- initializing a GSF ($T(k)$) (col. 3, lines 42-45 and col. 4, line 6);
- updating the GSF ($N(k+1)$) based upon bandwidth requirements for a plurality of LVS jobs ($C(k+1)$ and $V(k+1)$) for a time interval (col. 4, lines 28-34);
- determining a size of at least one file transmission task ($Alloc(i,k)$) which can be transmitted during the time interval based upon the updated GSF (col. 4, lines 16-25); and
- allocating at least a portion of the updated GSF to at least one file transmission task based upon the size and an allocation strategy (a predetermined allocation scheme based on priority), wherein each of the at least one transmission task may be allocated a different amount of bandwidth (col. 5, lines 43 – col. 6, lines 1-54).

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Claims 19, 22, 35-36, 38, 40, and 42 are computer readable medium with program instructions claims corresponding to method for media delivery in a network claims 1, 4, 17-18, 37, 39, and 41, respectively, and are rejected for the same reason set forth in the rejection of claims 1, 4, 17-18, 37, 39, and 41, respectively.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Natarajan (USPN 5,742,594) in view of Jamoussi et al. (USPN 6,128,280).

Per **claim 2**, Natarajan teaches initializing a global step function (GSF) (T (k)) (col. 3, lines 42-45 and col. 4, line 6) and subtracting from the GSF bandwidth requirements for a plurality of on-going live-video stream (LVS) jobs and LVS jobs planned (new requests) from a time of initialization to a maximum duration (col. 4, lines 28-38).

However, Natarajan fails to teach obtaining system configuration parameters from a database tables.

Jamoussi et al. teaches obtaining system configuration parameters (control processor and the IMAFP processor accessing the pool and system parameters) from a database tables (Figs. 2 and 3) (col. 3, lines 35-45).

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Given the teaching of Jamoussi et al., it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate obtaining parameters from the database tables into the method of Natarajan as the database tables provide simple and systematic information storage and retrieval process for the parameters.

Per **claim 3**, Natarajan teaches the LVS jobs and their bandwidth requirement (col. 3, lines 2-3 and 50-57), subtracting from the GSF the bandwidth requirements for the LVS jobs (col. 4, lines 28-38).

Jamoussi et al. teaches recording (storing) pool parameters and logging a total remaining available bandwidth (pool 3, the available bandwidth for nrt-VBR) that can be scheduled for file transmissions in the database tables (col. 5, lines 18-21 and 41-45).

Claims 20-21 are computer readable medium with program instructions claims corresponding to method for media delivery in a network claims 2-3, respectively, and are rejected for the same reason set forth in the rejection of claims 2-3, respectively.

7. **Claims 5-7 and 23-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Natarajan (USPN 5,742,594) in view of Jamoussi et al. (USPN 6,128,280).

Per **claim 5**, Natarajan teaches reading LVS jobs (the total number of slots allocated to CBR and VBR-RT traffic is obtained, col. 4, lines 1-8) and allocating bandwidth to LVS jobs not yet allocated (new requests) bandwidth (col. 4, lines 35-38).

However, Natarajan does not teach recording the allocated bandwidth in the database tables.

Jamoussi et al. teaches recording (being updated) the allocated bandwidth to the LVS jobs in the database tables (col. 8, lines 17-31 and 36-44).

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Given the teaching of Jamoussi et al., it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate recording the allocated bandwidth in the database tables into the method of Natarajan to keep track of the information in a simple and systematic way.

Per **claim 6**, the examiner takes official notice that it is well known to determine if the updating of information occurs often enough and to report an error when the updating does not occur often enough as part of a basic system error control in order to maintain and provide a conflict-free and smooth operation to the system.

Per **claim 7**, Natarajan teaches subtracting from a GSF the bandwidth requirements for the LVS jobs (col. 4, lines 28-38).

Claims 23-25 are computer readable medium with program instructions claims corresponding to method for media delivery in a network claims 5-7, respectively, and are rejected for the same reason set forth in the rejection of claims 5-7, respectively.

8. **Claims 14-15, 32-33, and 43** are rejected under 35 U.S.C. 103(a) as being unpatentable over Natarajan (USPN 5,742,594) in view of Caldara et al. (USPN 5,748,629).

Per **claim 14**, Natarajan does not teach freeing any allocated available bandwidth unused by a transmission of the at least one file transmission task.

However, Caldara et al. teaches freeing (made available) any allocated available bandwidth unused (allocated, unused) by a transmission of the at least one file transmission task (col. 7, lines 10-18).

Given the teaching of Caldara et al., it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the step of freeing up available

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any allocated unused bandwidth into the method of Natarajan to achieve high bandwidth utilization in the network which, in turn, will enable it to provide low-cost and highly efficient integrated services as taught by Caldara et al. (col. 1, lines 51-61).

Per **claim 15**, Natarajan teaches updating a GSF (the total number of slots available for non-real time users is determined at the beginning of every frame, col. 4, lines 38-38).

Caldara et al. teaches constructing a payback strip (unused allocated bandwidth) from the portion of the available bandwidth allocated to the at least one file transmission task (col. 7, lines 10-18), adding the payback strip to the GSF (any allocated unused bandwidth is added to the dynamic bandwidth, col. 7, lines 10-18), and recording an available bandwidth remaining after the adding step in a plurality of database tables (Dynamic Bandwidth Lists) (col. 7, lines 27-44).

Claims 32 and 33 are computer readable medium with program instructions claims corresponding to method for media delivery in a network claims 14 and 15, respectively, and are rejected for the same reason set forth in the rejection of claims 14 and 15, respectively.

Per **claim 43**, Natarajan teaches a system, comprising:

- a server (a microcomputer), comprising a manager (an allocation routine) for file transmissions via a satellite transponder (a wireless communications link interface), wherein the manager comprises a bandwidth allocation scheduler (a scheduler), the bandwidth allocation scheduler capable of allocating a different amount of an available bandwidth to each of a plurality of file transmission tasks (non-real time traffic, data sources) (Fig. 1, col. 2, lines 7-19 and 64 – col. 3, lines 1-4, and 38-67, and col. 5, lines 43-61).

However, Natarajan does not teach a database table.

Caldara et al. teaches a database table (a Switch Allocation Table) comprising information required by the manager for file transmissions (col. 6, lines 18-21).

Given the teaching of Caldara et al., it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a database table into the system of Natarajan to manage the allocated bandwidth as taught by Caldara et al. (col. 6, lines 18-21).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Allowable Subject Matter

9. **Claims 8-13, 16, 26-31, and 34** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Spaur et al. (USPN 6,122,514), disclosing selecting an acceptable network channel using application requirements and channel operating parameters with recovery procedures;
- Eytchison (USPN 6,363,434 B1), disclosing sending an indication when there is not enough bandwidth for transmission; and
- Takeda et al. (USPN 6,266,346 B1), disclosing computing an overhead.

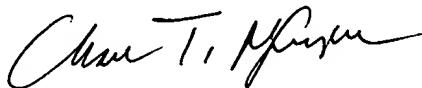
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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nittaya Juntima whose telephone number is 703-306-4821. The examiner can normally be reached on Monday through Friday, 8:00 A.M - 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Chau Nguyen can be reached on 703-308-5340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-9408 for regular communications and 703-827-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

NJ
Nittaya Juntima
December 12, 2002



CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Attachment for PTO-948 (Rev. 03/01, or earlier)
6/18/01

The below text replaces the pre-printed text under the heading, "Information on How to Effect Drawing Changes," on the back of the PTO-948 (Rev. 03/01, or earlier) form.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes **incorporated** therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the Notice of Allowability. Extensions of time may **NOT** be obtained under the provisions of 37 CFR 1.136(a) or (b) for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit the drawing corrections within the time period set in the attached Office communication. See 37 CFR 1.85(a).

Failure to take corrective action within the set period will result in **ABANDONMENT** of the application.